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Short essays written by 60 secon d and third grade children were analyzed in order to compare the global quality with the syntactic maturity contained therein. Global quality is a broad measure of the level of ability and development evidenced by the pupil in his particular writing. Syntactic maturity is a measure based on the existence of various syntactical structures in the writing. Considered in this study were (1) the number of T-units (minimal terminable syntactic units), (2) the mean T-unit length, (3) the number of subordinate clauses, and (4) the number of all clauses. High correlations were found between global quality measures and the number of T-units, the ratio of the clauses per T-unit, the number of subordinate clauses, and the number of all clauses. These results indicate that fluency and complexity are related to quality in the written compositions of these students. Further research is needed. A bibliography and statistical tables are included. (WD)

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A STUDY COMPARING GLOBAL QUALITY AND SYNTACTIC MATURITY IN THE WRITTEN COMPOSITION OF SECOND AND THIRD GRADE STUDENTS

by Edieann Biesbrock
&
L. Ramon Veal

INTRODUCTION

The purpose of this study was to compare global quality with syntactic maturity in short essays produced by sixty second and third grade children. It should be noted that this was not an attempt to equate global quality and syntactic maturity but rather to examine the possibility of a positive or negative relationship between the two measures. Generally speaking, syntactic measures are more nearly indices of growth or maturity than measures of quality (O'Donnell, 1968; Veal, 1968). On the other hand, global measures of written composition are, in essence, methods of rating the overall quality of compositions.

BACKGROUND

Global measures are generally of two types: a general impression method, based on a set of criteria but not using them analytically (Braddock et al.); and a method employing model or comparison essays (E.T.S.). Briefly, the former provides an overall judgment of quality when the rater has several criteria in mind. The latter method provides an overall judgment by way of a comparison between models (previously rated papers) and a new set of papers produced under the same conditions as those of the models.

Syntactic measures have a history of proving effective in measuring growth and maturity in the written composition of young children. LaBrant (1933) reported a high statistical correlation between a child's age and the frequency of subordinate clauses in his writing. LaBrant's subordination ratio, the ratio of subordinate clauses to all clauses, has been widely used with representative writing samples as a measure of composition maturity. Hunt (1965) developed

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another useful measure of writing maturity, a measure he used in analyzing the compositions of fifty-four fourth, eighth, and twelfth grade students. Hunt's measure, the T-unit (one main clause and its modifiers), proved to be an apparently valid index of written language maturity. The T-unit can be expanded at any of many different points of structure that are modifiers, complements, or substitutes for words in the main clause. Hunt found that the T-unit is expanded (or lengthened) as children grow older: fourth graders averaged 8.6 words per T-unit; eighth graders averaged 11.5 words per T-unit; and twelfth graders averaged 14.6 words per T-unit.

THE TEST INSTRUMENT

The standardized global essay instrument with five forms (essay topics) used in this study was developed at the University of Georgia from a population of more than 1,000 second and third graders.[1] This typical product-scale instrument evaluates the "product" (i.e., the student's written composition) by comparing it to other "products" to derive a relative measure of its merit. Actual samples of students' writing produced and selected under standardized conditions in grades two and three served as models on a seven-point scale. Rater reliability coefficients for the global essay instrument ranged from the mid .60's to the upper .70's, as did reliability coefficients for equivalent forms. Examinee reliability was checked at .70. Validity checks involving the original criteria for the essay instrument and teacher estimates of student composition ability yielded moderately high coefficients (for validity checks of original

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1 Biesbrock, E.F. "The Development and Use of a Standardized Instrument for Measuring Composition Ability in Young Children (Grades Two and Three)." Unpublished dissertation, University of Georgia, 1968.

criteria .70; for validity checks of teacher estimates .56).

GLOBAL ESSAY RATINGS

Sixty papers were selected from compositions produced by approximately 1,000 second and third graders. The papers represented a stratified, one- through seven distribution of the levels of quality on the global essay scale. Papers were selected from the fall 1967 sample of essays that had been reliably rated. The criterion of "reliably rated" was that all four raters, while rating independently of each other, agreed by assigning the same numerical rating to the essay. The sixty papers selected on this basis are recorded by quality levels in Table I.

TABLE I

GLOBALLY RATED PAPERS USED IN THE SYNTACTIC ANALYSIS

Numerical Rating	Number of Papers
1	5
2	10
3	10
4	10
5	10
6	10
7	5

T-UNIT ANALYSIS

The sixty papers were analyzed by two graduate assistants (one checking

the other's work) who divided each paper into T-units as developed in Hunt's research. The compositions were analyzed by dividing them into the smallest possible units of written expression which (1) ignored all punctuation, and (2) used all of the words written in the composition. These were the "minimal terminable syntactic units" (or T-units). In addition to counting the number of T-units per paper, several additional frequency counts were made to provide a more thorough syntactic analysis. These counts included the following:

(1) number of subordinate clauses per paper,

(2) total number of clauses per paper,

(3) number of garbles per paper,[2]

(4) mean T-unit length.

Finally, the T-unit ratio (the ratio of clauses to T-units) was computed. The ratio of clauses to T-units is computed as:

$$\frac{\text{subordinate + main clauses}}{\text{main clauses}}$$

The resulting scores of syntactic maturity were correlated with each other and with the global estimates of quality (one through seven). Means for the syntactic data by the seven levels of global quality are reported in Table II. Clear trends of increase are evident in the breakdown of data for several of the syntactic measures.

FINDINGS

Correlations appeared to be high for global essay ratings and the number of T-units (.75) and also the ratio of clauses per T-unit (.62). However, the correlation between the global essay rating of quality and other measures, such as the number of subordinate clauses (.71) and the number of all clauses (.80),

are equally significant. Among the levels of quality for this sample of second and third graders, these measures were as reliable as T-unit counts in distinguishing differences. The correlation between the global essay ratings and mean T-unit length was lower (.48), and, consequently, did not appear to be as adequate a measure in distinguishing global quality. The contrast between the trends of mean T-unit length and mean number of T-units is shown in Figure 1.

Garbles also proved to be no indication of quality, for although they appeared infrequently, they appeared at various levels of global quality with no discernible trend. From Table II, it can be noted that the syntactic measures, with the previously mentioned exceptions of the number of garbles and mean T-units length, showed a steady trend of increasing in proportion to the global quality rating. The matrix in Table III shows inter-correlations among the several syntactic measures examined and their correlations with global essay quality ratings. As expected, the closely related measures of number of all clauses, number of subordinate clauses, and number of T-units are highly related. In summary, the direction of the differences between the means of the syntactic measures and the high positive correlations for syntactic measures and global essay ratings would both suggest that, in general, fluency and complexity are related to quality in written composition of second and third graders.

CONCLUSIONS

In the Introduction section, it was stated that the syntactic analysis of children's composition was not an attempt to equate syntactic maturity with global quality. In examining the relationship between them, however, it was found that certain factors of syntactic maturity correlated highly with global essay ratings

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[2]Garbles are fragments and/or series of meaningless words (analogous to Loban's maze).

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of quality. The syntactic measures which proved related to the differentiation of the global levels of quality within the second and third grade compositions included the number of T-units (.75), the number of subordinate clauses (.71), and the number of all clauses (.80). Together, these factors could be considered to be measures of length; thus, one can conclude that there is a dimension of fluency which might account for the different levels of rated quality.

By itself, the number of subordinate clauses has been traditionally related to the complexity or "structure" of written composition (LaBrant, 1933; Loban, 1963), and such was the finding of this study. However, a second measure of complexity, the mean length of T-units, did not correlate highly (.48) with global essay quality for these second and third graders. In this study, then, mean T-unit length did not prove as effective as Hunt (1965) and O'Donnell (1967) found it to be in distinguishing between compositions produced at grade levels separated by spans of several years (e.g., fourth and eighth grades). Mean T-unit length may not be a reliable method of distinguishing between levels of quality within a specific age group (i.e., the second and third grade sample).

As an outgrowth of this study, two areas have been identified where further research would be valuable. Further analysis comparing global estimates of quality and syntactic measures of maturity is important in other grades at the elementary level. And, in connection with this area of investigation, more information is needed to establish the usefulness of mean T-unit length as a measure in an analysis of composition quality.

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AERA
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TABLE II

BREAKDOWN OF MEANS FOR SYNTACTIC DATA
BY GLOBAL QUALITY

Global Rating	No. of Papers	$\bar{X}$ No. of Garbles Per Paper	$\bar{X}$ No. of T-units Per Paper	$\bar{X}$ No. of Subordinate Clauses Per Paper	$\bar{X}$ All Clauses Per Paper	$\bar{X}$ Ratio of Clauses To T-units	$\bar{X}$ T-unit Length *(No. of Words Per T-unit)
1	5	.60	3.80	.20	4.00	1.03	5.16
2	10	.00	5.30	.10	5.40	1.05	6.14
3	10	.10	6.80	.60	7.40	1.09	7.25
4	10	.00	7.10	.90	8.00	1.14	6.66
5	10	.20	10.90	1.40	12.30	1.14	7.30
6	10	.00	13.20	3.40	16.60	1.25	8.52
7	5	.00	14.20	5.60	20.00	1.39	10.30

*These might be compared to Hunt's 8.6 mean words per T-unit for fourth graders and O'Donnell's 7.67 words for third graders and 9.34 words for fifth graders.

TABLE III

INTERCORRELATIONS FOR SYNTACTIC MEASURES AND

CORRELATION OF SYNTACTIC AND GLOBAL MEASURES

	Garbles	T-units	Subordinate Clauses	All Clauses	T-unit Ratio	T-unit Length
Garbles	1.00	- .12	- .14	- .14	- .17	- .15
T-units	-.16	1.00	.64	.96	.38	.28
Subordinate Clauses	-.14	.64	1.00	.82	.86	.57
All Clauses	-.14	.96	.82	1.00	.58	.41
T-unit Ratio	-.17	.38	.86	.58	1.00	.63
T-unit Length	-.15	.28	.57	.41	.63	1.00
Global Essay Quality (1-7 Levels)	-.25	.75	.71	.80	.62	.48

FIGURE 1

MEAN NUMBER OF T-UNITS AND
MEAN T-UNIT LENGTH BY GLOBAL RATING